

provides that, when an agency for good cause finds that notice and public procedure are impracticable, unnecessary or contrary to the public interest, an agency may issue a rule without providing notice and an opportunity for public comment. EPA has determined that there is good cause for making today's rule final without prior proposal and opportunity for comment because EPA merely is correcting the effective date of the promulgated rule to be consistent with the congressional review requirements of the Congressional Review Act as a matter of law and has no discretion in this matter. Thus, notice and public procedure are unnecessary. The Agency finds that this constitutes good cause under 5 U.S.C. 553(b)(B). Moreover, since today's action does not create any new regulatory requirements and affected parties have known of the underlying rule since July 9, 1997, EPA finds that good cause exists to provide for an immediate effective date pursuant to 5 U.S.C. 553(d)(3) and 808(2).

Because the delay in the effective date was caused by EPA's inadvertent failure to submit the rule under the CRA, EPA does not believe that affected entities that acted in good faith relying upon the effective date stated in the July 9, 1997, **Federal Register** should be penalized if they were complying with the rule as promulgated.

## II. Administrative Requirements

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a "significant regulatory action" and is therefore not subject to review by the Office of Management and Budget. In addition, this action does not impose any enforceable duty or contain any unfunded mandate as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4), or require prior consultation with State officials as specified by Executive Order 12875 (58 FR 58093, October 28, 1993), or involve special consideration of environmental justice related issues under Executive Order 12898 (59 FR 7629, February 16, 1994). Because this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). EPA's compliance with these statutes and Executive Orders for the underlying rule is discussed in the July 9, 1997, **Federal Register** document.

Pursuant to 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA will submit a report containing this rule

and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office; however, in accordance with 5 U.S.C. 808(2), this rule is effective on May 4, 1998. This rule is not a "major rule" as defined in 5 U.S.C. 804(2).

This final rule only amends the effective date of the underlying rule; it does not amend any substantive requirements contained in the rule. Accordingly, to the extent it is available, judicial review is limited to the amended effective date.

Dated: April 22, 1998.

**Carol Browner,**  
*Administrator.*

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## FEDERAL COMMUNICATIONS COMMISSION

### 47 CFR Part 73

[MM Docket No. 97-223; RM-9014]

### Radio Broadcasting Services; Ashdown and DeQueen, AR

**AGENCY:** Federal Communications Commission.

**ACTION:** Final rule.

**SUMMARY:** In response to a petition for rule making filed jointly on behalf of Bunyard Partnership, Jay W. Bunyard and Anne W. Bunyard, this document substitutes Channel 227C3 for Channel 221A at Ashdown, Arkansas, and modifies the license of Bunyard Partnership for Station KARQ(FM), as requested. Additionally, to accommodate the modification at Ashdown, Channel 221C2 is substituted for Channel 226C2 at DeQueen, Arkansas, and the license of Jay W. Bunyard and Anne W. Bunyard for Station KDQN-FM is modified accordingly. As the petitioners' modification request was filed pursuant to the provisions of Section 1.420(g)(3) of the Commission's Rules, competing expressions of interest for Channel 227C3 at Ashdown were not permitted. See 62 FR 58936, October 31, 1997. Coordinates for Channel 227C3 at Ashdown, Arkansas, are 33-40-22 and 94-11-02; coordinates for Channel 221C2 at DeQueen, Arkansas, are 34-13-35 and 94-17-35. With this action, the proceeding is terminated.

**EFFECTIVE DATE:** June 8, 1998.

**FOR FURTHER INFORMATION CONTACT:** Nancy Joyner, Mass Media Bureau, (202) 418-2180.

**SUPPLEMENTARY INFORMATION:** This is a synopsis of the Commission's Report and Order, MM Docket No. 97-223, adopted April 15, 1998, and released April 24, 1998. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC's Reference Center (Room 239), 1919 M Street, NW., Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractor, International Transcription Service, Inc., 1231 20th Street, NW., Washington, DC 20036, (202) 857-3800.

### List of Subjects in 47 CFR Part 73

Radio broadcasting.

Part 73 of Title 47 of the Code of Federal Regulations is amended as follows:

### 47 CFR Part 73—[AMENDED]

1. The authority citation for part 73 reads as follows:

**Authority:** 47 U.S.C. 154, 303, 334, 336.

### § 73.202 [Amended]

2. Section 73.202(b), the Table of FM Allotments under Arkansas is amended by removing Channel 221A and adding Channel 227C3 at Ashdown.

3. Section 73.202(b), the Table of FM Allotments under Arkansas is amended by removing Channel 226C2 and adding Channel 221C2 at DeQueen.

Federal Communications Commission.

**John A. Karousos,**  
*Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.*

[FR Doc. 98-11738 Filed 5-1-98; 8:45 am]

BILLING CODE 6712-01-F

## DEPARTMENT OF TRANSPORTATION

### Federal Highway Administration

### 49 CFR Part 393

[FHWA Docket No. MC-94-31; FHWA-97-2318]

RIN 2125-AD42

### Parts and Accessories Necessary for Safe Operation; Antilock Brake Systems

**AGENCY:** Federal Highway Administration (FHWA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FHWA is amending the Federal Motor Carrier Safety Regulations (FMCSRs) to require that air-braked truck tractors manufactured on or after March 1, 1997, and air-braked single-unit trucks, buses, trailers,

and converter dollies manufactured on or after March 1, 1998, be equipped with antilock brake systems (ABSs) that meet the requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 121. The FHWA is also requiring hydraulic-braked trucks and buses manufactured on or after March 1, 1999, to be equipped with ABSs that meet the requirements of FMVSS No. 105. In addition, the agency is requiring motor carriers to maintain the ABSs on these vehicles. This rulemaking is intended to ensure that the in-service brake standards of the FMCSRs are consistent with the FMVSSs. The rulemaking would also improve the safety of operation of commercial motor vehicles by reducing the incidence of accidents caused by jackknifing and other losses of directional stability and control during braking. With regard to commercial motor vehicles manufactured prior to the dates previously mentioned, the FHWA is not requiring motor carriers to retrofit such vehicles with ABSs.

**DATES:** This rule is effective June 3, 1998.

**FOR FURTHER INFORMATION CONTACT:** Mr. Larry W. Minor, Office of Motor Carrier Research and Standards, HCS-10, (202) 366-4009; or Mr. Charles E. Medalen, Office of the Chief Counsel, HCC-20, (202) 366-1354, Federal Highway Administration, 400 Seventh Street, SW., Washington, DC 20590-0001. Office hours are from 7:45 a.m. to 4:15 p.m., e.t., Monday through Friday, except Federal holidays.

**SUPPLEMENTARY INFORMATION:**

**Electronic Access**

Internet users can access all comments received by the U.S. DOT Dockets, Room PL-401, by using the universal resource locator (URL): <http://dms.dot.gov>. It is available 24 hours each day, 365 days each year. Please follow the instructions online for more information and help.

An electronic copy of this document may be downloaded using a modem and suitable communications software from the **Federal Register** Electronic Bulletin Board Service at (202) 512-1661. Internet users may reach the **Federal Register's** home page at: <http://www.nara.gov/nara/fedreg> and the Government Printing Office's database at: <http://www.access.gpo.gov/su-docs>.

**Background**

Section 4012 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (Pub. L. 102-240, 105 Stat. 1914, 2157) directs the Secretary of Transportation to initiate a rulemaking

concerning methods for improving the braking performance of new commercial motor vehicles,<sup>1</sup> including truck tractors, trailers, and their dollies. Congress specifically directed that the rulemaking examine antilock systems, means of improving brake compatibility, and methods of ensuring effectiveness of brake timing.

**The National Highway Traffic Safety Administration (NHTSA) Rulemaking**

In response to the ISTEA, the NHTSA published a final rule amending Federal Motor Vehicle Safety Standard (FMVSS) No. 105, *Hydraulic Brake Systems*, and FMVSS No. 121, *Air Brake Systems*, to require that medium and heavy vehicles be equipped with an ABS to improve the lateral stability (i.e., traction) and steering control of these vehicles during braking (60 FR 13216, March 10, 1995). For truck tractors, the ABS requirement is supplemented by a 48.3 kilometer per hour (30-mph) braking-in-a-curve test on a low coefficient of friction surface using a full brake application. By improving lateral stability and control, these requirements will significantly reduce jackknifing and other losses of control during braking, as well as the deaths and injuries caused by those control problems.

In addition, the NHTSA final rule requires all powered heavy vehicles to be equipped with an in-cab lamp to indicate ABS malfunctions. Truck tractors and other trucks equipped to tow air-braked trailers are required to be equipped with two separate in-cab lamps: one indicating malfunctions in the towing vehicle ABS and the other in the trailer ABS. The requirement for the in-cab lamp to alert the driver of malfunctions in the trailer ABS applies to trucks and truck tractors manufactured on or after March 1, 2001 (61 FR 5949, February 15, 1996). Trailers produced during an initial 11-year period (March 1, 1998 through March 1, 2009) must also be equipped with an external malfunction indicator that is visible to the driver of the towing tractor (61 FR 5949).

The amendments to FMVSS No. 105 become effective on March 1, 1999. With the exception of the in-cab indicator for trailer ABS malfunctions, the amendments to FMVSS No. 121 became effective on March 1, 1997, for

truck tractors, and on March 1, 1998, for air-braked trailers, converter dollies, single unit trucks, and buses.

**FHWA Notice of Intent**

On March 10, 1995, the FHWA published a notice of intent to initiate a rulemaking concerning requirements for ABSs on commercial motor vehicles operating in interstate commerce (60 FR 13306). The notice of intent included an extensive discussion of the NHTSA's ABS fleet study conducted between 1988 and 1993. Copies of the reports from the fleet study have been placed in the docket.<sup>2</sup> The NHTSA tracked the maintenance performance histories of 200 truck tractors and 50 semitrailers equipped with ABSs, as well as the histories of a comparison group of 88 truck tractors and 35 semitrailers that were not equipped with ABSs to determine the incremental maintenance costs and patterns associated with installing ABSs on these heavy vehicles.

The authors concluded that, based upon the data collected during the fleet study, currently available ABSs are reliable, durable, and maintainable. While an ABS is not a zero-cost maintenance item, its presence on a vehicle did not substantially increase maintenance costs (less than one percent for tractors, less than two percent for trailers) or decrease vehicle operational availability.

The NHTSA data indicate that ABSs are neither difficult nor unduly expensive to maintain. The fleet test results do not indicate that the level of maintenance required to keep an ABS functional is unreasonable relative to the safety benefits that will result from the use of these systems.

The FHWA concluded that a rulemaking should be initiated to propose amending the FMCSRs to include ABS requirements and solicited comments on this decision.

**FHWA Notice of Proposed Rulemaking (NPRM)**

On July 12, 1996, the FHWA published a notice of proposed rulemaking that would require motor carriers to maintain the ABSs on commercial motor vehicles manufactured on or after the effective dates of the NHTSA requirements (61 FR 36691). The NPRM discussed the comments received in response to the

<sup>1</sup> For the purposes of section 4012, the term "commercial motor vehicle" means any self-propelled or towed vehicle used on highways to transport passengers or property if such vehicle has a gross vehicle weight rating (GVWR) of 11,794 kilograms (kg) (26,001 pounds) or more. The NHTSA's final rule on ABS applies to medium and heavy vehicles with a GVWR of 4,536 kg (10,001 pounds) or more.

<sup>2</sup> "An In-Service Evaluation of the Reliability, Maintainability, and Durability of Antilock Braking Systems (ABS) for Heavy Truck Tractors," DOT Report No. 807 846, March 1992, and "An In-Service Evaluation of the Reliability, Maintainability, and Durability of Antilock Braking Systems (ABS) for Semitrailers," DOT Report No. 808 059, October 1993.

notice of intent and the FHWA's responses to the comments. The comments covered a range of issues including: Interpretation of 49 CFR 396.3—certain commenters believed an amendment to part 393 was not necessary and that § 396.3 could be used to assure that motor carriers provide appropriate maintenance for ABSs; research on ABS operation and failure modes; retrofitting; inspection procedures; and applicability to Canada- and Mexico-based motor carriers. The FHWA did not propose an exemption for commercial motor vehicles operated in the United States by Canada and Mexico-based motor carriers, but specifically requested comments from such motor carriers and original equipment manufacturers that sell vehicles for the Canadian and Mexican markets.

### Discussion of Comments

The FHWA received 8 comments in response to the July 12, 1996, NPRM. The commenters were: Advocates for Highway and Auto Safety (the Advocates); the American Trucking Associations, Inc. (ATA); Insurance Institute for Highway Safety (IIHS); the International Brotherhood of Teamsters (the Teamsters); Midland-Grau Heavy Duty Systems; Rockwell WABCO Vehicle Control Systems (Rockwell WABCO); the Texas Department of Transportation (Texas DOT); and, the Truck Manufacturers Association (TMA).

Generally, the commenters were in favor of the FHWA establishing requirements for motor carriers to maintain the ABSs. However, the ATA expressed concerns about the FHWA's proposed cross-reference to FMVSS Nos. 105 and 121, and certain aspects of the proposed regulatory language that the ATA considered design restrictive. The Texas DOT supported the proposed requirements for ABSs, but expressed concern about radio frequency interference (RFI) problems with current generation ABSs. The specific concerns or issues raised by the commenters are discussed below.

### Retrofitting

The ATA, Teamsters, Midland-Grau, Rockwell WABCO, and the TMA supported the FHWA's decision not to propose an ABS retrofitting requirement for vehicles manufactured prior to the effective date of the NHTSA requirements. None of the remaining commenters expressed views concerning retrofitting. Rockwell WABCO stated:

Rockwell WABCO agrees with the FHWA's position that it is inappropriate to require

ABS to be retrofitted on commercial vehicles built prior to the effective date of the NHTSA regulation. Rockwell WABCO believes antilock braking systems (ABS) represent the best and most reliable technology available to improve the stability and control of medium and heavy vehicles during braking. However, for the systems to function as designed, they must be properly installed. Rockwell WABCO believes it would be extremely difficult to achieve quality installations if a nation-wide retrofit program were mandated on commercial vehicles built prior to the effective date of the regulation.

Today, commercial vehicle OEMs (original equipment manufacturers) are installing ABS in a reliable manner. With proper documentation and attention to harness design, wire routing, component mounting and quality control procedures, reliable ABS installations have become routine. However, without the infrastructure available at the OEM level, significant difficulties could result if ABS retrofitting was mandated.

It would be extremely difficult for ABS manufacturers to provide the necessary support to the large number of retrofit centers that would be required to perform a task of this magnitude. Because of the variety and configurations of vehicles involved, a significant amount of engineering would be required to accomplish a major retrofit program. As the NHTSA research has shown, even with the cooperation of a variety of suppliers, it potentially is difficult to achieve defect free tractor/truck ABS installations during a retrofitting process.

The TMA is an organization of truck manufacturers, including the Ford Motor Company, Freightliner Corporation, General Motors Corporation, Mack Trucks, Inc., Navistar International Transportation Corporation, PACCAR Inc. (manufacturers of Kenworth and Peterbilt trucks) and Volvo GM Heavy Truck Corporation. The TMA stated:

TMA does not support the concept of ABS retrofit. The FHWA is not proposing that motor carriers be required to retrofit vehicles manufactured prior to the dates previously mentioned, however, the FHWA requested comments on this subject. Kits for retrofit have not been designed and are, therefore, not commercially available.

The Teamsters stated:

The International Brotherhood of Teamsters agrees that retrofitting ABS for CMV's (commercial motor vehicles) currently in service would not be advisable. It would be extremely difficult and expensive to properly retrofit all the vehicles which are now in service. As the NHTSA Fleet Study proved, the technology is not currently available to allow a smooth retrofitting process. Many technical problems would be faced during the retrofitting process: pieces of equipment would have to be fabricated, and workers would have to be trained to install and service these "new" brake

systems. According to the requirements of § 396.25, these workers would need to obtain one year of experience before working on ABS.

There would be no guarantee that the retrofitted brakes would operate properly and it might be possible to damage or disable the original brake system thus making it impossible to stop the vehicle within a safe distance. The International Brotherhood of Teamsters is inclined to agree with the FHWA assumption that the percentage of malfunctions of the retrofitted ABS would be " \* \* \* much greater if motor carriers were required to attempt retrofitting the innumerable configurations of air-braked vehicles." (61 FR 36695) For these reasons which could negatively impact on CMV safety the International Brotherhood of Teamsters believes it would not be prudent to require motor carriers to retrofit ABS at this time.

If, in the future, retrofit kits were developed which adequately addressed these safety concerns, then requiring retrofitting would be wise. These kits, provided by the manufacturers, could be designed for specific vehicles and provide detailed instructions to assist in their installation. Should these kits become available, the International Brotherhood of Teamsters would recommend that retrofitting be required.

The FHWA agrees with the commenters; statements about the difficulties the motor carrier industry would have retrofitting commercial motor vehicles with ABS. The FHWA believes the NHTSA research provides a strong indication of the types of technical problems that would be expected if motor carriers were required to retrofit vehicles with ABS.

As the FHWA noted in the preamble to the NPRM, at the time the NHTSA conducted its research, only one heavy truck manufacturer offered ABS as a fully-engineered production option on its line of trucks. In contrast, most of the remaining truck tractor manufacturers had only limited experience installing small numbers of "current-generation" ABSs and, therefore, had not worked out many of the detailed design aspects of installing the systems. The retrofitting of ABSs on truck tractors required teamwork on the part of ABS suppliers, truck manufacturers, wheel and hub suppliers, and wiring harness suppliers. Even with this team effort, some of the test vehicles were delivered to the participating motor carriers with pre-existing problems that, for one reason or another, prevented the ABS from functioning properly.

In all, 116 out of the 200 truck tractors (58 percent) experienced installation/pre-production design-related problems. The researchers indicated that the relatively high percentage is indicative of the "newness" of the systems in North American applications. Table 1

summarizes the types of problems that were experienced in the truck tractor

portion of the fleet study. Table 2 summarizes installation-related

problems in the semitrailer portion of the fleet study.

TABLE 1.—TRUCK TRACTOR ABS INSTALLATION/PRE-PRODUCTION DESIGN-RELATED PROBLEMS BY SYSTEM COMPONENT NEEDING WORK

ABS component	Number of trucks requiring inspections, adjustments or repairs of this component	Number of trucks requiring replacements of this component
Wiring Cables .....	12	<sup>2</sup> 23
Wiring Connectors .....	29	10
Sensors and Related Parts .....	5	10
Modulator Valves and Related Parts .....	13	<sup>3</sup> 50
Electronic Control Units (ECUs) .....	17	<sup>2</sup> 20
Others <sup>1</sup> .....	7	
Total Number of Trucks per Column .....	57	102
Overall Number of Trucks Involved in Installation/Pre-Production Design Related Problems .....	116	

<sup>1</sup> Others include: rewiring due to installation oversights; two miscellaneous wire resecurments; and the addition of one ground strap to adjust the ECU.

<sup>2</sup> One problem represented all of these replacements.

<sup>3</sup> One problem involved 40 of these trucks, while another involved 10 trucks.

**Note:** Individual column numbers are not additive since specific trucks may have needed maintenance on more than one component.

TABLE 2.—SEMITRAILER ABS INSTALLATION/PRE-PRODUCTION DESIGN-RELATED PROBLEMS BY SYSTEM COMPONENT NEEDING WORK

ABS component	Number of semitrailers requiring inspections, adjustments or repairs of this component	Number of semitrailers requiring replacements of this component
Wiring Cables .....	0	2
Wiring Connectors .....	11	0
Sensors and Related Parts .....	<sup>2</sup> 3	10
Modulator Valves and Related Parts .....		
Electronic Control Units (ECUs) .....		5
Others <sup>1</sup> .....		26
Total Number of Semitrailers per Column .....	14	31
Overall Number of Semitrailers Involved in Installation/Pre-Production Design-Related Problems .....	31	

<sup>1</sup> Others include: Isolation diode installation and replacement of ECU grommets.

<sup>2</sup> Sensor adjustment resulted from incorrectly adjusted wheel bearings on new semitrailers.

**Note:** Individual column numbers are not additive since specific semitrailers may have needed maintenance on more than one component.

The NHTSA report on the truck tractor portion of the fleet study indicates the percentage of installation-related problems is similar to that observed by many of the participating fleets when they receive newly-built vehicles. However, the FHWA believes the percentage of malfunctions would be much greater if motor carriers were required to attempt retrofitting innumerable configurations of air-braked vehicles. The FHWA considers NHTSA's fleet study to be a best-case scenario for retrofitting ABS in that the vehicle and brake manufacturers (as well as wheel and hub manufacturers) worked together to complete the installations of the ABS. Even with this collaborative effort of experienced engineers, numerous problems related to the retrofitting process surfaced during the fleet study.

Although many motor carriers have excellent maintenance programs and talented engineering staff, the FHWA believes that the majority of motor carriers could not retrofit their vehicles without a substantial amount of technical assistance from vehicle and component manufacturers. Without this technical assistance, it is more likely than not that many of the retrofitted ABS installations would not be performed correctly, thereby creating the potential for a degradation of the CMV's braking performance. It is unrealistic to expect manufacturers to be able to help more than 300,000 motor carriers complete the retrofitting of several million vehicles while working on the design and installation of ABSs on newly manufactured vehicles.

The comments submitted by Rockwell WABCO, Midland-Grau, and the TMA suggest that brake system and vehicle

manufacturers would not have the resources to assist motor carriers in complying with a retrofitting requirement. Even if there were a collaborative effort between vehicle and component manufacturers and the motor carriers, it is unlikely that the quality of the ABS installations would be better than those performed for the NHTSA fleet study.

Although none of the commenters to the NPRM specifically discussed the costs of retrofitting, the FHWA believes it is important to note that the cost of retrofitting a commercial motor vehicle with an ABS is likely to be higher than original equipment manufacturer (OEM) installations because the vehicle will have to be removed from revenue service during the retrofitting process. This is not the case for brand new vehicles. Also, repeated adjustments or repairs of the type described in the

NHTSA research reports would mean more down time for the retrofitted vehicles.

The FHWA agrees with the Teamsters' interpretation of § 396.25 of the FMCSRs, Qualifications of brake inspectors. As the agency indicated in the preamble to the NPRM, § 396.25 prohibits motor carriers from allowing their employees to be responsible for ensuring that brake-related inspection, repair, and maintenance tasks are performed correctly unless the employee has at least one year of training and/or experience. This requirement was issued in response to section 9110 of the Truck and Bus Safety and Regulatory Reform Act of 1988 (now codified at 49 U.S.C. 31137(b)). Therefore, motor carriers that lack sufficient staff with at least one year of training and/or experience at retrofitting ABSs prior to the effective date of a retrofitting requirement, would have to rely on commercial garages or similar facilities to fulfill a retrofitting requirement. Since many of these facilities would also have very little, if any, experience retrofitting ABSs, there is no assurance that they could do a better job than the motor carriers' employees. Therefore, most motor carriers could not allow their employees to attempt the retrofitting of ABSs, and would not have a practical means to satisfy a retrofitting requirement.

#### *Roadside Inspection Procedures*

Rockwell WABCO commented on the importance of having standardized roadside inspection procedures for the various ABSs. Rockwell WABCO stated:

As stated in our earlier response to FHWA (after the agency's March 10, 1995, notice of intent), Rockwell WABCO would like to emphasize that the procedure must be short, simple and straightforward. The inspections should provide meaningful information about the condition of the ABS and take advantage of the self-diagnostic system capabilities required by (the NHTSA) rulemaking. Rockwell WABCO recommends that FHWA adopt a common inspection procedure for all ABS systems regardless of manufacturer or vehicle type.

If FHWA decides that roadside inspections are necessary and effective to ensure ABS is properly maintained, Rockwell WABCO recommends the inspection consist of (1) a basic bulb check of the ABS indicator lamp to be conducted when the ignition switch is turned from the "off" to the "on" position followed by (2) verification that the ABS indicator lamp deactivates at the end of the check of lamp function.

In order to pass the inspection, the bulb must illuminate during the bulb check and then deactivate. This will indicate the lamp is functioning properly and there are no current or pre-existing malfunctions present in the ABS. If the ABS indicator lamp does

not activate at all when the ignition key is turned from the "off" to the "on" position, a potential bulb or indicator lamp circuit problem exists. If the indicator lamp does not deactivate after the bulb check, a current or pre-existing malfunction potentially exists in the ABS, requiring diagnosis and possible repair and/or adjustment.

The FHWA appreciates the information provided by Rockwell WABCO. The agency provided members of the Commercial Vehicle Safety Alliance's<sup>3</sup> (CVSA) Vehicle Committee with copies of the July 12, 1996, notice of proposed rulemaking which included a detailed discussion of the inspection procedures recommended by the brake manufacturers commenting to the docket. The FHWA will work with the appropriate committees within the CVSA to assist in the development of training material to help inspectors identify ABS components and determine if the ABSs are working properly.

The FHWA, through a contract with the Trucking Research Institute (TRI)<sup>4</sup>, has developed videotapes to familiarize commercial motor vehicle drivers and maintenance personnel with ABSs. The FHWA has also developed an ABS brochure for drivers ("Truck Drivers Guide to Antilock Braking Systems," FHWA-MC-98-006, March 1998) and an ABS handbook for maintenance personnel ("Technician Guidelines for Antilock Braking Systems: Air-Braked Trucks, Tractors and Trailers," FHWA-MC-98-008, March 1998). The videotapes ("Antilock Braking Systems: What Every Driver Needs to Know" and "Technician Guidelines for ABS") and driver brochure are available free of charge from the FHWA. Copies may be requested by contacting the Office of Motor Carrier Research and Standards at the address or telephone number listed at the beginning of this final rule. The technicians booklet will be available in July 1998 and may be purchased from the National Technical Information Service (NTIS), U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The telephone number for ordering

<sup>3</sup> The Commercial Vehicle Safety Alliance (CVSA) is an organization of Federal, State and Provincial government agencies and representatives from private industry in the United States, Canada and Mexico dedicated to improvement of commercial vehicle safety. State agencies responsible for conducting roadside inspections are members of the CVSA.

<sup>4</sup> The Conference Committee report on the 1993 Department of Transportation Appropriations Act (Pub.L. 102-388, October 6, 1992) directed the FHWA to follow the instructions of the House report on obligating certain research funds, including funding research on means to improve the training of heavy truck brake mechanics. H.R. Conf. Rep. No. 102-924, at 35 (1992).

publications from the NTIS is 703-605-6000.

The FHWA believes the information included in the videotapes and publications can be used by the CVSA to help train employees of State agencies responsible for conducting roadside inspections within a relatively short period of time.

#### *Inspection, Repair, and Maintenance Procedures*

Two commenters discussed the need for inspection, repair, and maintenance procedures for motor carriers. The Teamsters stated:

While the International Brotherhood of Teamsters agrees with the FHWA that specific roadside inspection procedures should not be included in the FMCSR there is a need to specify within the regulations the methodology of vehicle inspections for motor carriers. The vehicle inspections should include a review of the ABS malfunction indicator lamp, as well as any other appropriate inspection procedures. It is logical that specific language detailing the systematic inspection, maintenance, and repair of ABS should be included in part 396, appendix G, subpart B.

Midland-Grau stated:

Regarding the need to add detailed systematic, inspection, repair, and maintenance requirements in part 396 of the FMCSRs, MIDLAND-GRAU believes this is not necessary. MIDLAND-GRAU along with other ABS suppliers and vehicle manufacturers, will continue their efforts to support the industry with the necessary product, inspection, repair, and service information. MIDLAND-GRAU believes there are already more effective methods to develop and distribute the subject information. The FHWA has in this notice defined clearly the appropriate sources for this information.

The FHWA does not agree with the Teamsters' argument that the FMCSRs should include detailed inspection procedures for motor carriers to maintain ABSs. The FMCSRs do not currently contain detailed inspection procedures for systems and components on commercial motor vehicles. The regulations provide inspection criteria and minimum qualifications for individuals performing the periodic or annual inspection, and motor carrier employees responsible for brake-related inspection, repair, and maintenance tasks. The FHWA believes this approach is more effective than trying to develop a single set of procedures to cover all types of ABSs, including present and future designs. As noted earlier, the agency has developed videotapes and publications to familiarize drivers and maintenance personnel with ABSs. The agency believes the videotapes and publications will provide the industry

with basic information to effectively maintain ABSs and advice on when to seek expert assistance from vehicle and/or brake system manufacturers.

The FHWA appreciates the information provided by Midland-Grau. The agency notes that the TRI has worked with Midland-Grau and the other brake manufacturers in developing the ABS videotapes and publications for the FHWA. This cooperative effort between the private sector and the government to provide non-regulatory technical guidance to the industry is an effective alternative to prescriptive regulations concerning ABS maintenance procedures.

#### *Applicability to Canadian and Mexican Vehicles*

The Advocates, Teamsters, and TMA expressed support for the FHWA's proposal not to provide an exemption for commercial motor vehicles operated in the United States by Canada- and Mexico-based motor carriers. None of the other commenters expressed an opinion concerning this issue.

The Teamsters stated:

The International Brotherhood of Teamsters strongly agrees with the FHWA that it " \* \* \* is appropriate to require ABS on foreign-based vehicles manufactured on or after the effective dates of the NHTSA requirements if those vehicles are operated within the United States." (61 FR 36696) This requirement would ensure that " \* \* \* all CMVs operating in interstate or foreign commerce within the United States are required to meet the same safety standards." (Ibid)

The International Brotherhood of Teamsters encourages the strict enforcement of these requirements as it is currently known that a large percentage of those vehicles crossing the Mexican-United States border are not in compliance with the United States FMCSRs.

The Advocates stated:

Advocates strongly supports this initiative by the FHWA and applauds the agency's determination not only to improve domestic commercial vehicle operating safety, but also to set an example for international harmonization that increases medium and heavy vehicle safety for Canadian and Mexican motor carriers. This rulemaking proposal is a textbook example of regulating in the public interest. We commend the agency for its resolve to move forward on this major safety policy despite adverse comments filed in response to the FHWA's March 10, 1995, notice of intent to initiate the instant rulemaking. Advocates endorses this proposal and, in light of the lead time for compliance that duplicates the calendars set forth for FMVSSs Nos. 105 and 135, asks that the agency promulgate a final rule as soon as possible that is effective on the date of publication.

The TMA stated:

TMA feels that only commercial motor vehicles that meet all of the applicable requirements of part 393, including the proposed § 393.55 requirements that addresses ABS, should be allowed to operate in the U.S. Therefore, we support the FHWA proposal to not grant an exception for commercial motor vehicles operated in the U.S. by Canada- and Mexico-based motor carriers. Truck manufacturers, however, need timely resolution of the following questions so that they can appropriately advise their Canadian and Mexican motor carrier customers on ABS purchases.

1. When is the enforcement of this requirement going to commence?
2. When will the inspection procedures and criteria be finalized?
3. How will this requirement be enforced? Will it be handled at the border by U.S. Customs officials? By FHWA officials? By State officials? Or will it be enforced during random roadside inspections?

The FHWA agrees with the commenters. Although the NPRM explicitly requested comments from foreign carriers that would be subject to the proposed requirements, the agency did not receive any comments from Canada- or Mexico-based motor carriers operating within the United States. The agency is not aware of any technical or economic reasons why these carriers could not comply with the ABS requirements. Therefore, the final rule is applicable to CMVs operated in the United States by Canada- and Mexico-based motor carriers. The FHWA notes that this decision is consistent with the applicability of all of the agency's equipment-related regulations.

Currently, subpart C of part 393 cross-references FMVSS No. 105 (Hydraulic Brake Systems), FMVSS No. 106 (Brake Hoses), and FMVSS No. 121 (Air Brake Systems), as well as several other CMV-related FMVSSs. The FHWA's cross-references have the net effect of requiring that vehicles operated by Canada- and Mexico-based motor carriers be equipped with safety features and equipment that are compatible with the NHTSA requirements irrespective of where the vehicle was originally manufactured, or whether the vehicle was manufactured for sale or use in the United States. Commercial motor vehicles that do not meet all of the applicable requirements of part 393 cannot be operated in the United States. As such, commercial motor vehicles operated by foreign-based motor carriers are currently required by the FHWA to have, at a minimum, brake systems that comply with the applicable provisions of FMVSS Nos. 105, 106, and 121 in effect on the date of manufacture.

Although the FHWA does not have data on the extent to which CMVs manufactured for sale in Canada and Mexico comply with the current brake-

related FMVSSs and FMCSRs, it is unlikely that there are technical reasons that would preclude manufacturers of these vehicles from offering ABS as an option. As previously mentioned, foreign-based motor carriers are currently required to operate commercial motor vehicles that comply with all of the applicable requirements of part 393 while in the United States.

Prior to issuing the NPRM, the FHWA contacted the TMA to determine the availability of ABS on air braked vehicles sold in Canada and Mexico.

The TMA indicated that five of the manufacturers that sell medium and heavy-duty trucks in Canada install ABSs as standard equipment. Another manufacturer offers ABSs as optional equipment for the Canadian market.

With regard to the Mexican market, none of the TMA's members install ABSs as standard equipment. Only two of the TMA's members offer ABSs as optional equipment. However, another member indicated it would make ABSs available on units manufactured in Mexico in the near future.

The FHWA also contacted Dina, a Mexican manufacturer of heavy trucks, and determined that ABSs are offered as optional equipment.

Based upon the information obtained from the TMA and Dina, and the docket comments received in response to the NPRM, the FHWA believes that requiring ABSs on Canadian and Mexican CMVs manufactured on or after the effective dates of NHTSA's ABS requirements, and operated in the United States, is appropriate. The FHWA notes that ABS is not yet commercially available for hydraulically-braked medium and heavy vehicles in the United States, Canada or Mexico. However, given the March 1, 1999, effective date of the FMVSS No. 105 requirements for ABSs, the FHWA believes these systems will be commercially available in time for motor carriers to comply with the FMCSRs.

In response to the TMA's questions about enforcement, the FHWA and the States may cite motor carriers for violations of the ABS requirements at any time after the final rule becomes effective. The ABS requirements will be enforced primarily through roadside inspections conducted by the States. Checking the status of the ABSs will be one of many items (e.g., brake adjustment and the condition of major brake system components; steering, suspension, and fuel systems; tires, wheels, and rims; axles and axle positioning components; lamps and reflectors; cargo securement) inspectors examine during roadside inspections.

The agency does not expect the recommended inspection procedures that may be used by the States to be complex or time consuming. The brake manufacturers' comments provided in response to the agency's March 10, 1995, notice of intent, and the July 12, 1996, NPRM include straightforward inspection procedures that could be used by the States at any time after the effective date of the final rule.

#### *Cross-Referencing the FMVSSs*

The ATA opposed the manner in which the FHWA cross-referenced FMVSS Nos. 105 and 121 and presented two possible alternative ways of writing § 393.55. The ATA stated:

By referencing FMVSSs (Nos.) 105 and 121 in this proposed FMCSR, the agency is placing a burden on motor carriers to show compliance with new vehicle requirements which were written for manufacturers. Carriers cannot do this without help.

While we agree with the FHWA/OMC's (Office of Motor Carriers) intent, we are concerned with the language of the regulation. The problem comes from the reference to the FMVSSs in the FMCSRs.

FMVSSs are standards directed at manufacturers who have the personnel, facilities, and test equipment necessary to test their products. By requiring vehicle users to assure that replacement parts meet the FMVSSs, FHWA/OMC is requiring that consumers create the technical expertise of manufacturers for themselves. Virtually no motor carrier has either the staff, facilities or equipment with which to test products for compliance to FMVSS type requirements.

If the agency wants vehicle users to purchase repair parts and components which meet FMVSSs, then it must work with the National Highway Traffic Safety Administration (NHTSA) to assure that new parts and components are labeled with compliance information or a code. This is already done in FMCSR § 393.67(f) for fuel tanks. Consumers, on their own, are incapable of certifying that replacement parts and components meet new vehicle or component standards. Consumers can ask suppliers to provide certifications, however, they cannot go beyond such an importune.

The ATA indicated that this issue was raised in its comments to the FHWA's notice of proposed rulemaking concerning automatic brake adjusters and brake adjustment indicators (59 FR 39518, August 3, 1994). The ATA quoted the FHWA's response to its comments. The agency's response, presented in the preamble to the final rule, indicated an in-use requirement for a commercial motor vehicle part or accessory that references an FMVSS does not place a burden on motor carriers (60 FR 46236, September 6, 1995). The agency also indicated motor carriers have ample experience in obtaining replacement parts for vehicle subsystems. The ATA believes the

FHWA's response to its comments "explicitly places in focus the problem which exists in this area." The ATA stated:

Carriers face little difficulty acquiring replacement parts for lighting and illuminating systems, in compliance with FMCSR 393.11, because (paragraph 5.8), *Replacement Equipment*, of FMVSS 108 requires such parts to carry appropriate identification markings. The same is true for tires (\$6.5 of FMVSS 119) and wheels (\$5.3 of FMVSS 120). In the case of brake components like ABS parts, however, no such labeling is required.

The ATA also stated:

Part of the concern which drives us to the conclusion that parts need to be marked in a manner that enables carriers to show continued compliance with FMVSSs stems from the fact that component systems are becoming obsolete at an unprecedented pace. It is not at all unusual for a carrier wanting to repair a system to find that it is better to upgrade than repair. Two important considerations in the decision are whether replacement parts identical to the original exist and whether the upgraded system will out-perform its forerunner.

The FHWA does not believe the ATA's concerns about cross-referencing FMVSS Nos. 105 and 121 are warranted. The regulatory language proposed did not include a requirement for motor carriers to conduct certification testing of ABSs in order to verify vehicles were equipped with an ABS that meets the NHTSA requirements.

Motor vehicle manufacturers must certify that the vehicles they manufacture for sale and use in the United States meet all applicable Federal Motor Vehicle Safety Standards issued by the NHTSA. In certain cases, the vehicle safety standards require motor vehicle equipment to be marked by the equipment manufacturer to certify that the product meets the applicable safety standard (e.g., retroreflective sheeting for use on trailers manufactured on or after December 1, 1993, are marked with DOT-C2, DOT-C3, or DOT-C4, depending on the width of the tape). During roadside inspections of commercial motor vehicles, Federal and State officials look for certification markings on components, such as, retroreflective sheeting, tires, brake hoses, fuel tanks, windshields, etc., because there are no other practical means to verify that such components or items meet the testing requirements specified in the Federal regulations. The certification markings for these components or items also help motor carriers identify products that meet applicable Federal requirements.

Through cross-references to the FMVSSs, the FHWA places upon motor

carriers the responsibility for being knowledgeable about the Federal manufacturing standards that are applicable to heavy trucks, buses, and trailers. Motor carriers have the responsibility of purchasing vehicles and components from manufacturers that are able to certify that the products they sell meet the applicable Federal manufacturing standards. If the commercial motor vehicle is damaged during its service-life, or components wear out and require replacement, motor carriers are required to have the vehicle properly repaired by knowledgeable and capable maintenance personnel. Maintenance personnel should recognize that there are Federal safety standards and be capable of determining whether the repairs being performed will restore the vehicle to its previous condition.

Looking specifically at the cross-references to FMVSS Nos. 105 and 121, vehicle manufacturers are responsible for ensuring that the ABSs installed in new commercial motor vehicles meet the applicable requirements. The FHWA acknowledges that individual ABS components are not required to be marked or labeled by the manufacturer. However, there is no readily apparent reason why the ECU, sensors, modulator valves, tone rings and connectors would need certification markings in order for motor carriers to determine the appropriate replacement components for the ABSs. Motor carriers need only know that a specific component in the ABS needs to be replaced, locate the appropriate replacement part and ensure that it is properly installed in accordance with the vehicle or ABS manufacturer's recommendations. Generally, this will ensure that the ABS continues to perform as required.

With regard to the assertion that the regulatory language would prevent carriers from upgrading their ABSs in the future, the ATA has misinterpreted the proposed ABS requirements, as well as the current FMCSRs. The agency does not prohibit motor carriers from modifying their vehicles to meet the latest Federal safety standards. Motor carriers must, at a minimum, ensure that their vehicles meet the cross-referenced FMVSSs in effect at the time the commercial motor vehicle was manufactured, but may modify their vehicles to meet any subsequent version of the applicable safety standards.

Motor carriers who want to go beyond routine inspection, repair and maintenance tasks and attempt major upgrades of the ABSs on their commercial motor vehicles, are responsible for ensuring that the modified brake systems meet the



minimum performance requirements specified by the NHTSA. However, this does not mean that motor carriers cannot exceed those requirements or that they must conduct testing. Carriers may rely on installation instructions and other information from the ABS manufacturer to determine whether the upgraded ABS meets the NHTSA's performance requirements.

The argument by the ATA that motor carriers would be required to understand, in whole or in part, the test procedures that manufacturers are required to follow, or conduct testing in order to ensure compliance with the cross-referenced standards, is without basis. For more than 25 years, the FMCSRs have included cross-references to the FMVSS Nos. 105 and 121, with an apparently clear understanding by the vast majority of the regulated industry that motor carriers are not required to conduct certification testing. Although motor carriers and vehicle manufacturers have requested interpretations on numerous aspects of part 393 of the FMCSRs, the cross-references to the FMVSSs do not appear to have raised a discernible level of confusion or concern. Therefore, the FHWA has retained the cross-references to FMVSS Nos. 105 and 121.

#### *Flexibility to Disconnect ABSs if Manufacturing or Design Defects are Suspected*

The ATA expressed concerns that ABSs may fail in ways that could adversely impact the service brake system on commercial motor vehicles. The ATA believes the FHWA should allow carriers to disconnect ABSs if defects are suspected. The ATA stated:

The agency implies that consumers need not worry about ABS failing unsafe. Based on NHTSA's FMVSS 121 demonstration work (previously referenced) this problem does, however, remain a serious concern.

In our comments to the FHWA Notice of Intent in this docket, we raised the issue of carriers being able to disconnect ABSs if, "because of existing circumstances, doing so is the safest policy." This Notice attempts to discount this concern on the basis that NHTSA will correct any serious failures through a safety-defect related recall and that "\* \* \*, there is no documentation of an ABS defect or malfunction contributing to an accident as the ATA suggests may occur in the future."

A major and growing concern that carriers have with government is that it is not structured to react as fast as necessary given the ever increasing rate at which technology continues to change. While a suspect bolt in a system can be checked in a laboratory rather quickly, and a consensus on the results of that test rapidly formed, an unwanted

transient system response, caused by a flaw in a microchip, is much harder to positively identify and diagnose. There is no way that NHTSA can respond with a safety recall program fast enough to assure a faulty ABS controller or modulator component does not lead to several accidents.

Past experience with many truck systems, including ABS, has taught motor carriers that certain product designs occasionally incorporate critical components that fail and that such failure will repeat across the fleet. This is not like a person with one automobile where the situation can be quickly assessed, the driver made aware of the problem and a repair made at the owner's convenience.

A fleet of hundreds or thousands of vehicles in many locations requires time to find the involved equipment and make the required repairs before the adverse effects of a defect can be mitigated. In the meantime, the fleet must be operated as safely as possible. This can call for quick temporary measures, to assure no further accidents happen, while solutions are developed, procedures and/or parts made available, and corrections made. What has been proposed in this docket should not be allowed to become a regulation which keeps fleets from quickly taking the most prudent course of safe action in dealing with a product defect.

While FHWA/OMC (Office of Motor Carriers) contends that no accidents caused by an ABS which did not fail-safe are yet documented, the fact is that a latent failure can exist in an ABS which will not surface until the systems have been in use for a number of years, in many different applications. For example, the situation that developed after air bags were in widespread use, i.e., injuring, sometimes fatally, young children and old people, is now being addressed.

A review of NHTSA's defect files will illustrate this point. We cite the heavy truck steering gear box failure which occurred several years ago that caused a major disruption in fleet operations. The manufacturer of the gear assembly asked owners of trucks all over the country to immediately stop their trucks until they could positively identify the problem and replace suspect gear boxes. This manufacturer-generated recall cost the industry many millions of dollars in vehicle downtime. If a defect surfaces in an ABS component which can cause it to malfunction in an unsafe way, e.g., unintentional release of the brakes, the involved vehicles should not be stopped until the problem is identified and corrected, when a simple ABS

disconnect will allow them to operate safely.

Users of ABS not only have to be concerned about mechanical failures, like the one that occurred with the gear box, but, also with electrical failures and faulty algorithms programmed in the ECU, which, under certain circumstances, make a vehicle less safe. A prime example of this is the reduction in stopping capability caused when ABS equipped vehicles operate on unpaved roads. This discovery caused the logging truck tested in Canada to be equipped with a switch to disable the ABS when the truck was operated off of the paved highway (Forest Engineering Research Institute of Canada's report SR-97 (TP 11815E) entitled *Evaluation of an Antilock Braking System and Automatic Slip Regulation on a Log-Hauling Truck*).

The FHWA disagrees with the ATA's arguments and has not adopted regulatory language that would allow motor carriers to disconnect ABSs. Based upon the information presented in the NHTSA's research reports, and the preamble to the NHTSA's March 10, 1995, final rule concerning ABSs, the FHWA does not foresee the development of problems such as those anticipated by the ATA.

In the event an ABS or vehicle manufacturer, or the NHTSA determines that there is a safety-related defect, the manufacturers are responsible for notifying purchasers of the defective equipment and remedying the problem free of charge (49 CFR part 577, Defect and Noncompliance Notification). If a manufacturer or the NHTSA indicates there is an ABS defect of the severity alluded to by the ATA, the FHWA would immediately notify all Federal officials responsible for enforcing the FMCSRs and State officials responsible for enforcing compatible State regulations to ensure that carriers are not unfairly penalized for inoperable ABSs. However, in the absence of notification from a vehicle or ABS manufacturer or the NHTSA, the FHWA does not intend to allow motor carriers to disconnect the ABSs.

The preamble to NHTSA's March 10, 1995, final rule included a response to the ATA's concerns about alleged safety problems with current-generation ABSs. The NHTSA indicated that during the two-year evaluation of 200 ABS-equipped truck tractors, a total of 421 incidents were recorded involving in-service wear related ABS malfunctions. The vast majority (99.8 percent) of these malfunctions were benign. When the ABSs became inoperative, the vehicle reverted to a normally-braked vehicle



without ABS protection and remained fully operational until the malfunction was remedied. Similarly, during the two-year evaluation of 50 ABS-equipped semi-trailers, 44 such incidents were noted. All (100 percent) were benign.

The NHTSA indicated that only two ABS malfunction incidents occurred during the tractor fleet study that resulted in the vehicle having reduced braking performance. The first incident involved a manufacturing defect with the surface coating of a piston slide valve in the modulator section of a drive-axle-only ABS and only affected one truck-tractor. When the ABS manufacturer found the cause of this failure, a design change was made to rectify the problem and all the other test units in the fleet study were retrofitted with the improved components.

The second incident was discussed in the research report concerning the evaluation of trailer ABSs and involved a leaking relay valve. The motor carrier experienced periodic problems with leaking relay valves which were part of the ABS relay valve/modulator assemblies on their ABS-equipped tractors. The ABS modulator valves and relay valves were combined into one unit which serves the left and right brake chambers of the steer or drive axles on the tractor. In one of these cases, the supply air was found to be leaking to the relay valve exhaust port, a problem that had reportedly occurred on several previous occasions. The leaking valves were returned to the ABS manufacturer to determine the cause of this malfunction.

The ABS manufacturer disassembled the valves and determined that rust and oil sludge in the tractors' air systems were causing the relay valve's intake and exhaust seats to not seal properly, resulting in the air leakage. Therefore the problem was related to improper maintenance by the motor carrier and not the design, manufacture or installation of the ABS.

In responding to the ATA's descriptions of ABS problems experienced by motor carriers that were not involved in the NHTSA fleet study, the NHTSA stated:

Contrary to ATA's allegations that existing ABSs have significant safety problems, most commenters, including vehicle and brake manufacturers, appear to agree with NHTSA's assessment that current generation ABSs are safe and reliable. Unlike the 1970's when several vehicle and brake manufacturers objected to the rulemaking, and ATA, TEBDA (Truck Equipment and Body Distributors Association), and PACCAR challenged the antilock standard in court, comments to the September 1993 NPRM indicate that vehicle and brake manufacturers now generally believe that the

proposal was appropriate and today's antilock systems provide significant safety benefits. (60 FR 13216, 13242, March 10, 1995)

The NHTSA indicated that neither the vehicle nor brake manufacturers expressed concern that today's ABSs would fail in such a way as to compromise basic braking performance, as ATA alleges.

Although the ATA argues that the NHTSA cannot respond fast enough with a safety recall to assure a faulty ABS does not lead to accidents, the FHWA notes that vehicle and ABS manufacturers are responsible for notifying vehicle owners if there is a defect which relates to motor vehicle safety, or the product fails to conform to applicable Federal safety standards. If the manufacturer is aware of a defect relating to motor vehicle safety, the manufacturer must take action. The NHTSA has the authority (pursuant to 49 U.S.C. 30118(b)) to order a manufacturer to provide notification of a defect or noncompliance in the event a manufacturer disputes complaints about the existence of a safety-related defect or noncompliance.

The FHWA believes the ATA has overlooked manufacturers' responsibilities and focused on the amount of time it would take the NHTSA to force a manufacturer to take action. The FHWA does not intend to penalize motor carriers for inoperative ABSs when there is an acknowledged dispute between manufacturers and the NHTSA. The FHWA would notify enforcement officials about potential ABS problems irrespective of whether there was a NHTSA-ordered notification to ensure that motor carriers are not unfairly penalized. The FHWA's actions would not have any bearing on the NHTSA's procedures concerning defect and noncompliance notification, but would serve only as an advisory to enforcement officials that there could be a defect or noncompliance in certain ABSs and that motor carriers operating the vehicles in question should not be cited for the specific defect or noncompliance while the matter was being resolved by the NHTSA.

With regard to the ATA's reference to the NHTSA's handling of the air bag issue, the FHWA considers the comment inappropriate in the context of this rulemaking. The ATA has provided no information to support its comparison between the NHTSA's air bag and antilock brake system rulemakings. The FHWA has carefully reviewed all of the NHTSA's rulemaking notices and research reports relevant to ABSs and supports the NHTSA's decision to require that commercial

motor vehicles be equipped with ABSs. Therefore, the FHWA is requiring motor carriers to maintain the ABSs.

#### *ABS Malfunction Signals*

The ATA believes the FHWA should establish performance-based requirements for ABS malfunction indicators, rather than use what the ATA considers to be design-restrictive standards specified by the NHTSA. The ATA stated:

By referencing "electrical circuit" in the sections of the regulation applying to ABS malfunction signals, the agency is unnecessarily limiting the options of future designers. The final regulation should be performance, not design oriented.

A major concern that commercial vehicle users have about FMVSS 121 is that it contains sections which are design rather than performance requirements. These sections contain design requirements because of the difficulty in writing performance standards. Specific design requirements can discourage the development of more effective designs. When FHWA/OMC (Office of Motor Carriers) incorporates design requirements into its regulations, then more effective components/systems cannot even be installed on used vehicles. And, if FMVSS 121 is changed to permit them, they still can't be used on older vehicles because they have to comply with FMVSS 121 as it was when the vehicle was built.

An implicit assumption evidently made in all portions of the proposal dealing with malfunction signals is that they need to be transmitted through wires. While this is true today, some of the advanced concept ABSs and EBSs (electronically-controlled braking systems), which we have been privileged to see, use other technology. Fiber optics, infrared, and radio frequency technologies can all be used to transmit malfunction signals and there is good reason to believe that, in the future, they will be.

The proposed regulation needs to be changed to embrace such technology by deleting references to "circuits" and "electrical circuit" and refer instead to the generic "system." This will make the proposal performance oriented, still require working malfunction systems, and preclude the need for modifications to the regulation to accommodate new technology.

Also, because the proposed FMCSR incorporates NHTSA requirements for malfunction lamps, the proposed (Section 393.55(d)) contains requirements for ABS malfunction lamps on combination vehicles which are unnecessarily difficult for commercial vehicle users to understand and do not appear to comply with FHWA's zero-based rulemaking objectives.

The FHWA disagrees with the ATA's arguments against the use of the terms "malfunction circuit" and "electrical circuit" in the proposed ABS requirements. The FHWA believes the ATA has mistakenly associated the requirements for ABSs to be capable of detecting certain malfunctions and

transmitting the information to the driver, with the methods for transmitting the signals.

The NHTSA requires that each truck tractor manufactured on or after March 1, 1997, and each single-unit vehicle manufactured on or after March 1, 1998, be equipped with an electrical circuit that is capable of signaling a malfunction that affects the generation or transmission of response or control signals in the vehicle's ABSs. Each of these vehicles is also required to have an indicator lamp, mounted in front of, and in clear view of, the driver. The indicator lamp is activated whenever there is a malfunction that affects the generation or transmission of the response or control signals in an ABS. The indicator lamp must remain activated as long as the malfunction exists, whenever the ignition (start) switch is in the "on" (run) position, irrespective of whether the engine is running. Each message about the existence of a malfunction in an ABS must be stored after the ignition switch is turned to the "off" position and automatically reactivated when the ignition switch is turned to the "on" position. The indicator lamps also must be activated as a check of lamp function whenever the ignition is turned to the "on" or "run" position. The indicator lamp must be deactivated at the end of the check of lamp function, unless there is a malfunction or a message about a pre-existing malfunction. (49 CFR 571.121, paragraph S5.1.6.2(a))

Each truck tractor manufactured on or after March 1, 2001, and each single-unit vehicle manufactured on or after March 1, 2001, that is equipped to tow another air-braked vehicle must be equipped with an electrical circuit that is capable of transmitting a malfunction signal from the antilock brake system(s) on one or more towed vehicle(s) (e.g., trailer(s) and converter dolly(ies)) to the trailer ABS malfunction lamp in the cab of the towing vehicle, and must have a means for connecting the electrical circuit to the towed vehicle. Each truck tractor and single-unit vehicle must also be equipped with an indicator lamp (separate from the indicator lamp used to alert the driver of malfunctions in the truck tractor or single unit vehicle's ABS) mounted in front of, and in clear view of, the driver, which is activated whenever the malfunction signal circuit in the towing vehicle receives a signal indicating an ABS malfunction on one or more towed vehicle(s). The indicator lamp must remain activated as long as an ABS malfunction signal from one or more towed vehicle(s) is present, whenever the ignition (start) switch is in the "on" ("run") position, irrespective

of whether the engine is running. The indicator lamp must also be activated as a check of lamp function whenever the ignition is turned to the "on" ("run") position. The indicator lamp shall be deactivated at the end of the check of lamp function unless a trailer ABS malfunction signal is present. (49 CFR 571.121, paragraph S5.1.6.2(b))

Section 571.121, paragraphs S5.2.3.2 and S5.2.3.3 provide requirements for ABS malfunction signals and indicators on trailers, respectively.

The FHWA believes the NHTSA requirements provide functional specifications for malfunction circuits and indicators, but do not limit manufacturers to the use of wires for transmitting signals between circuits or components. The FHWA has discussed the ABS requirements with the NHTSA and confirmed that the regulations do not prohibit the use of fiber optics, infra-red or radio-frequency technologies for the transmission of signals. The FHWA notes that with all of these alternative means of transmitting signals, electrical circuits are needed to generate and receive the signals. Therefore, the agency believes the use of the terms "malfunction circuit" and "electrical circuit" is appropriate and is retaining those terms in the regulatory language.

#### *Radio-Frequency Interference (RFI)*

The Texas DOT discussed problems with ABSs installed on some of its vehicles. The State believes the operational problems were caused by radio-frequency interference. Radio-frequency interference (RFI) is electrical interference from sources of energy outside a system(s), in contrast to electromagnetic interference generated inside systems. The Texas DOT stated:

TxDOT's interests lie with the current state of technology in ABS systems, and potential problems involving this technology with regards to radio frequency interference (RFI).

While we support the installation of ABS brakes, we believe that FHWA should take into account potential problems with this emerging technology. We have experienced sporadic RFI problems affecting the ABS systems on our light duty equipment fleet, thus our reason for concern on the larger and more complex equipment.

Most carriers, like TxDOT, may have high power (≈100 watt) commercial two-way radios onboard their vehicles. TxDOT has shown over the last several years that the complex, heavily computerized environment which exists in modern vehicles is not conducive to such near-field radio frequency (RF) emissions. Radio transmissions can and do cause onboard system failures. Additional shielding and equipment design changes have been required in order for all systems to co-exist synergistically. TxDOT is currently working closely with the Society of

Automotive Engineers (SAE) in promoting new standards for RFI protection in these areas.

The FHWA has reviewed the preamble to NHTSA's final rule on ABSs and the NHTSA's research reports (referenced previously in this document and available in the docket) on the in-service evaluation of ABSs. The preamble and the research reports suggest RFI problems are the exception and not the rule for current-generation ABSs. The preamble states:

In the 1970s, there were several highly publicized incidents in which radio frequency interference (RFI) problems caused the ABS to cycle continuously during a brake application, thereby greatly diminishing braking power by venting brake system air pressure. The agency notes that manufacturers have completely eliminated the potential for RFI problems since current generation ABSs have been designed with shielded wiring systems and more sophisticated electronics that are better able to recognize spurious signals. No RFI problems have been reported with current-generation ABSs. (60 FR 13216, 13243, March 10, 1995)

The FHWA notes that the Texas DOT did not provide details on the year, make, and model of the vehicles in question or identify the manufacturer of the ABSs. In addition, the State did not indicate whether the RFI problems were reported to the NHTSA for appropriate action.

The FHWA considers the problems described by the Texas DOT to be serious, but emphasizes that the purpose of this rulemaking is to require motor carriers to maintain the ABSs on commercial motor vehicles subject to the NHTSA's requirements. The NHTSA, through notice-and-comment rulemaking, has provided all interested parties with the opportunity to discuss alleged safety problems with ABSs. The preamble to the NHTSA's March 10, 1995, final rule includes an extensive discussion of alleged safety problems with ABSs and the NHTSA's responses. The FHWA does not believe this rulemaking is the proper forum for debating such issues and has forwarded the Texas DOT's comments to the NHTSA.

#### **Discussion of the Final Rule**

##### *Section 393.55*

The FHWA is amending the FMCSRs by adding a new § 393.55, *Antilock brake systems*. This section is being added to subpart C, Brakes, of part 393. The provisions of paragraph (a) require that hydraulic braked trucks and buses manufactured on or after March 1, 1999, be equipped with an ABS that meets the requirements of FMVSS No. 105.

Paragraph (b) requires indicator lamps on hydraulic-braked vehicles to alert the driver of ABS malfunctions. Paragraph (c) requires that each air-braked truck tractor manufactured on or after March 1, 1997, be equipped with an ABS that meets the requirements of FMVSS No. 121. Paragraph (c) also covers air braked trucks, buses, trailers, and converter dollies manufactured on or after March 1, 1998. The requirement for ABS malfunction indicators on air braked vehicles is covered under paragraph (d). Paragraph (e) covers the requirement for the external indicator lamp on trailers and converter dollies manufactured between March 1, 1998, and March 1, 2009.

#### *Applicability to Canadian and Mexican Vehicles*

As discussed previously, the final rule is applicable to CMVs operated in the United States by Canada and Mexico-based motor carriers. Although the Federal governments of Canada and Mexico have not indicated whether they intend to require ABSs for CMVs operating in their countries, the FHWA believes that it is appropriate to require ABS on foreign-based vehicles manufactured on or after the effective dates of the NHTSA requirements if those vehicles are operated within the United States.

#### *Driveaway-Towaway Operations Exemption*

The FHWA has revised the language for the final rule to include an exemption for commercial motor vehicles engaged in driveaway-towaway operations (as defined in § 390.5). This action was taken in response to recent telephone calls from vehicle manufacturers and letters from the Truck Trailer Manufacturers Association (TTMA) and the Canadian Transportation Equipment Association (CTEA). The TTMA and the CTEA asked whether the ABS requirements would be applicable to vehicles built in the United States and exported to Canada or other countries. The TTMA also asked about the applicability of the ABS requirements to vehicles manufactured for the military. The FHWA has advised vehicle manufacturers, the TTMA and the CTEA that it would consider these issues in developing the final rule. Copies of the TTMA and the CTEA's letters are in the docket along with the FHWA's responses.

The FHWA believes that an exemption is appropriate for vehicles that are manufactured exclusively for use outside of the United States. Although these vehicles are operated on public roads in the United States when

they are being transported from the point of manufacture to the Canadian or Mexican border, or to railroad or shipping yards for subsequent movement to foreign destinations, the economic burden associated with requiring these vehicles to be equipped with ABSs for the one-way trip out of the United States would certainly exceed the potential benefits.

The driveaway-towaway exemption would also be applicable to vehicles being delivered to the Armed Forces of the United States. Therefore, motor carriers delivering new vehicles from manufacturers to the military cannot be penalized if the military purchases vehicles without ABSs. Vehicles operated by the military are exempt from the FMCSRs under § 390.3(f)(2).

The FHWA notes that the driveaway-towaway exemption provided in § 393.55 is consistent with exceptions provided by the NHTSA. Section 571.7(c) of the Federal Motor Vehicle Safety Standards provides an exception for vehicles and items of equipment manufactured for, and sold directly to the Armed Forces of the United States in conformity with contractual specifications. Section 571.7(d), through a cross-reference to the United States Code, indicates the FMVSSs do not apply to motor vehicles or motor vehicle equipment intended only for export, labeled for export on the vehicle or equipment and on the outside of any container of the vehicle or equipment, and exported (49 U.S.C. 30112(b)(2)). The FHWA believes that it is important to ensure, to the greatest extent practicable, consistency between the FMVSSs and the FMCSRs.

#### **Rulemaking Analyses and Notices**

##### *Executive Order 12866 (Regulatory Planning and Review) and DOT Regulatory Policies and Procedures*

The FHWA has determined that this action is not a significant regulatory action within the meaning of Executive Order 12866. No serious inconsistency or interference with another agency's actions or plans is likely to result, and it is unlikely that this regulatory action would have an annual effect on the economy of \$100 million or more. The FHWA's regulation only requires maintenance of ABSs; the NHTSA final rule published on March 10, 1995, is the regulation which actually requires installation of ABSs. The data collected by NHTSA indicates that the level of maintenance required to keep an ABS functional would only increase incrementally and would not be unreasonable relative to the safety benefits that would result from the use

of these systems. Therefore, it is anticipated that the economic impact of this rule will be minimal.

The preamble to NHTSA's March 10, 1995, final rule included estimates of the increased costs of operating heavy vehicles equipped with ABS. Three categories of operating costs were examined: lifetime maintenance costs; lifetime fuel costs due to the additional weight of the ABSs; and lifetime revenue loss due to payload displacement. The range of the increase in total lifetime operating costs related to equipping vehicles with ABS is from \$201 for single-unit trucks and buses to \$787 for truck tractors. The increase in total lifetime operating costs for trailers equipped to tow other trailers (i.e., used in multi-trailer combinations) is \$524 while the increase in operating costs for non-towing trailers is \$360. The increase in operating costs for trailer converter dollies is \$687. The NHTSA indicated that the total estimated increase in lifetime vehicle operating costs associated with ABSs for all commercial motor vehicles will be \$232 million per year when the majority of these vehicles are equipped with ABSs. A copy of the NHTSA's final economic assessment is included in the docket.

In addition, the FHWA has determined that this action is not a significant regulatory action under the Department of Transportation's regulatory policies and procedures because it does not concern a matter about which there is substantial public controversy, it will not have a substantial effect on State and local governments, or initiate a substantial regulatory program or change in policy.

#### *Regulatory Flexibility Act*

In compliance with the Regulatory Flexibility Act (5 U.S.C. 601–612), the FHWA has evaluated the effects of this rule on small entities and has determined that it will not have a significant economic impact on a substantial number of small entities. The FHWA finds that this rule will not significantly increase costs for motor carriers because FHWA regulations only require maintenance of brake systems and the data collected by the NHTSA shows that the presence of an ABS on a vehicle would not substantially increase maintenance costs (less than one percent for tractors and less than two percent for trailers) or decrease vehicle operational availability. The range of the increase in total lifetime operating costs related to having ABSs on a commercial motor vehicle (e.g., lifetime maintenance costs; lifetime fuel costs due to the additional weight of the ABSs; and lifetime revenue loss due to

payload displacement) is from \$201 for single-unit trucks and buses to \$787 for truck tractors. The increase in total lifetime operating costs for trailers equipped to tow other trailers (i.e., used in multi-trailer combinations) is \$524 while the increase in operating costs for non-towing trailers is \$360. The increase in operating costs for trailer converter dollies is \$687.

For a small entity operating a newly purchased truck tractor and semitrailer, the increase in total lifetime operating costs for each of the vehicles would be spread over the useful service-life of the vehicle. If, for example, the useful service-life for the truck tractor is seven years, and the useful service-life for the semitrailer is 14 years, the small entity would expect to spend \$787 during the useful service-life of the truck tractor and \$360 during the useful service-life of the semitrailer. The small entity would spend an additional \$787 in increased total lifetime operating costs during the service-life of the replacement truck tractor. This would result in approximately \$1,934 in increased total lifetime operating costs during a 14-year period in which the small entity purchases two new truck tractors and one semitrailer.

#### *Executive Order 12612 (Federalism Assessment)*

This action has been analyzed in accordance with the principles and criteria contained in Executive Order 12612, and it has been determined that this rulemaking does not have sufficient Federalism implications to warrant the preparation of a Federalism assessment. These new safety requirements do not directly preempt any State law or regulation, and no additional costs or burdens would be imposed on the States as a result of this action. Furthermore, the State's ability to discharge traditional State governmental functions will not be affected by this rulemaking.

#### *Executive Order 12372 (Intergovernmental Review)*

Catalog of Federal Domestic Assistance Program Number 20.217, Motor Carrier Safety. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities do not apply to this program.

#### *Paperwork Reduction Act*

This action does not contain a collection of information requirement for the purposes of the Paperwork Reduction Act of 1995, 44 U.S.C. 3501–3520.

#### *National Environmental Policy Act*

The agency has analyzed this rulemaking for the purpose of the National Environmental Policy Act of 1969 (42 U.S.C. 4321–4347) and has determined that this action will not have any effect on the quality of the environment.

#### *Unfunded Mandates Reform Act*

This rule does not impose any unfunded mandates on State, local, or tribal governments as defined by the Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1532–1538).

#### *Regulation Identification Number*

A regulation identification number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN contained in the heading of this document can be used to cross reference this action with the Unified Agenda.

#### **List of Subjects in 49 CFR Part 393**

Highway safety, Incorporation by reference, Motor carriers, Motor vehicle equipment, Motor vehicle safety.

Issued on: April 17, 1998.

**Gloria J. Jeff,**

*Deputy Administrator, Federal Highway Administration.*

In consideration of the foregoing, the FHWA is amending title 49, Code of Federal Regulations, chapter III, subchapter B, as follows:

#### **PART 393—[AMENDED]**

1. The authority citation for part 393 continues to read as follows:

**Authority:** Section 1041(b) of Pub. L. 102–240, 105 Stat. 1914, 1993 (1991); 49 U.S.C. 31136 and 31502; 49 CFR 1.48.

2. Section 393.5 is amended by adding the definition of *antilock brake system*, in alphabetical order, to read as follows:

#### **§ 393.5 Definitions.**

\* \* \* \* \*

*Antilock Brake System* or *ABS* means a portion of a service brake system that automatically controls the degree of rotational wheel slip during braking by:

- (1) Sensing the rate of angular rotation of the wheels;
- (2) Transmitting signals regarding the rate of wheel angular rotation to one or more controlling devices which interpret those signals and generate responsive controlling output signals; and
- (3) Transmitting those controlling signals to one or more modulators

which adjust brake actuating forces in response to those signals.

\* \* \* \* \*

3. In subpart C, § 393.55 is added to read as follows:

#### **§ 393.55 Antilock brake systems.**

(a) *Hydraulic brake systems.* Each truck and bus manufactured on or after March 1, 1999 (except trucks and buses engaged in driveaway-towaway operations), and equipped with a hydraulic brake system, shall be equipped with an antilock brake system that meets the requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 105 (49 CFR 571.105, S5.5).

(b) *ABS malfunction indicators for hydraulic braked vehicles.* Each hydraulic braked vehicle subject to the requirements of paragraph (a) of this section shall be equipped with an ABS malfunction indicator system that meets the requirements of FMVSS No. 105 (49 CFR 571.105, S5.3).

(c) *Air brake systems.* (1) Each truck tractor manufactured on or after March 1, 1997 (except truck tractors engaged in driveaway-towaway operations), shall be equipped with an antilock brake system that meets the requirements of FMVSS No. 121 (49 CFR 571.121, S5.1.6.1(b)).

(2) Each air braked commercial motor vehicle other than a truck tractor, manufactured on or after March 1, 1998 (except commercial motor vehicles engaged in driveaway-towaway operations), shall be equipped with an antilock brake system that meets the requirements of FMVSS No. 121 (49 CFR 571.121, S5.1.6.1(a) for trucks and buses, S5.2.3 for semitrailers, converter dollies and full trailers).

(d) *ABS malfunction circuits and signals for air braked vehicles.* (1) Each truck tractor manufactured on or after March 1, 1997, and each single-unit air braked vehicle manufactured on or after March 1, 1998, subject to the requirements of paragraph (c) of this section, shall be equipped with an electrical circuit that is capable of signaling a malfunction that affects the generation or transmission of response or control signals to the vehicle's antilock brake system (49 CFR 571.121, S5.1.6.2(a)).

(2) Each truck tractor manufactured on or after March 1, 2001, and each single-unit vehicle that is equipped to tow another air-braked vehicle, subject to the requirements of paragraph (c) of this section, shall be equipped with an electrical circuit that is capable of transmitting a malfunction signal from the antilock brake system(s) on the towed vehicle(s) to the trailer ABS malfunction lamp in the cab of the

towing vehicle, and shall have the means for connection of the electrical circuit to the towed vehicle. The ABS malfunction circuit and signal shall meet the requirements of FMVSS No. 121 (49 CFR 571.121, S5.1.6.2(b)).

(3) Each semitrailer, trailer converter dolly, and full trailer manufactured on or after March 1, 2001, and subject to the requirements of paragraph (c)(2) of this section, shall be equipped with an electrical circuit that is capable of signaling a malfunction in the trailer's antilock brake system, and shall have

the means for connection of this ABS malfunction circuit to the towing vehicle. In addition, each trailer manufactured on or after March 1, 2001, subject to the requirements of paragraph (c)(2) of this section, that is designed to tow another air-brake equipped trailer shall be capable of transmitting a malfunction signal from the antilock brake system(s) of the trailer(s) it tows to the vehicle in front of the trailer. The ABS malfunction circuit and signal shall meet the requirements of FMVSS No. 121 (49 CFR 571.121, S5.2.3.2).

(e) *Exterior ABS malfunction indicator lamps for trailers.* Each trailer (including a trailer converter dolly) manufactured on or after March 1, 1998 and before March 1, 2009, and subject to the requirements of paragraph (c)(2) of this section, shall be equipped with an ABS malfunction indicator lamp which meets the requirements of FMVSS No. 121 (49 CFR 571.121, S5.2.3.3).

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